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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,086	07/14/2000	Masahiro Tsujishita	649-753P	5579

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EXAMINER

LAO, LUN S

ART UNIT	PAPER NUMBER
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2644

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/617,086

Applicant(s)

TSUJISHITA ET AL.

Examiner

Lun-See Lao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 06-07-2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This is response to the amendment filed on 06-07-2005. Claims 1 and 8 have been amended and claim 6 has been cancelled and claims 12-21 have been added. Claims 1-5 and 7-21 are pending.

Specification

2. The amendment filed 06-07-2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: that “ if the high band component level satisfies a first the criteria, configuring the correction signal to extend from a signal value in the demodulated signal that occurs prior to the detected period, and if the high band component level satisfies a second criteria, configuring the correction signal based on a plurality of signal values in the demodulated signal that occur prior to the detected period” (see specification page 14 line 3-page 16 line 15 and page 21 line 24- page 22 line3), as recited in claims 13; and “ selecting one of the first and second correction signals based on whether the high band component level satisfies the first or second criteria” (see specification page 14 line 3-page 16 line 15 and page 21 line 24- page 22 line3), as recited in claim 14 and “ the sensitivity of noise detection decreases as the high band component level increases” (see specification page 14 line 3-page 16 line 15 and page 21 line 24- page 22 line 3) as recited in claim 21. Applicant is required to cancel the new matter in the reply to this Office Action.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: see the specification page 16 lines 16-20, the number 5 is not showed on fig.2a. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 1 is objected to because of the following informalities: claim 1 recites " the generation ~~period~~ of the noise" on line 12-13, which appears to be--- the generation time point of the noise--- and "the audio signal" on line 17, which appears to ---the demodulated audio signal---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claimed limitation “ a second corrector outputting the correction signal for correcting the noise according to at least one of: one or more values of the demodulated audio signal which occur before the generation period of the noise which is detected by said noise detector, and one or more of the demodulated audio signal which occur after the generation period” (see specification page 15 line24-page 16 line 11 and page 13 line 11- page 14 line17) was not supported in the further detail in specification nor in any of the claim.

The specification does not teach that one or more of the demodulated audio signal which occur after the generation period (see specification page 15 line 24-page 16 line 11 and page 13 line 11- page 14 line17 and figs 2a,2b) and claim 1 recited a demodulated audio signal.

7. Claims 13-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claimed limitation “ if the high band component level satisfies a first the

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criteria, configuring the correction signal to extend from a signal value in the demodulated signal that occurs prior to the detected period, and if the high band component level satisfies a second criteria, configuring the correction signal based on a plurality of signal values in the demodulated signal that occur prior to the detected period" (see specification page 14 line 3-page 16 line 15 and page 21 line 24- page 22 line3) was not supported in the further detail in the originally specification nor in any of the claim originally presented.

The specification does not teach that if the high band component level satisfies a first the criteria, and if the high band component level satisfies a second criteria (see specification page 14 line 3-page 16 line 15 and page 21 line 24- page 22 line3 and figs 2a, 2b) and claim 13 recited a first the criteria and second criteria are indefinite claimed limitation.

8. Claims 14, 15-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claimed limitation " selecting one of the first and second correction signals based on whether the high band component level satisfies the first or second criteria" (see specification page 14 line 3-page 16 line 15 and page 21 line 24- page 22 line3) was not supported in the further detail in the originally specification nor in any of the claim originally presented.

The specification does not teach that the high band component level satisfies a first the criteria or a second criteria (see specification page 14 line 3-page 16 line 15 and page 21 line 24- page 22 line 3 and figs 2a, 2b) and claim 14 recited a first the criteria and second criteria are indefinite claimed limitation.

9. Claim 21 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claimed limitation “ the sensitivity of noise detection decreases as the high band component level increases” (see specification page 14 line 3-page 16 line 15 and page 21 line 24- page 22 line 3) was not supported in the further detail in the originally specification nor in any of the claim originally presented.

The specification does not teach that the sensitivity of noise detection decreases as the high band component level increases (see specification page 14 line 3-page 16 line 15 and page 21 line 24- page 22 line 3 and figs 2a, 2b).

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 8 and 10-11 rejected under 35 U.S.C. 102(b) as being anticipated by Hirohashi (US PAT. 4,574,390).

Consider claim 8 Hirohashi teaches a noise removal apparatus comprising:
a noise detector (see fig.4 and fig.5, 95) detecting the noise included in a demodulation signal (4) having the information corresponding to audio signals of a plurality of channels (such as left and right) from the demodulation signals (col.7 line 30-col.8 line 5),

an audio signal demodulate (fig.4, 80) demodulating and outputting the audio signals corresponding to each of the plurality of channels (such as left and right) from the information corresponding to the audio signals included in the demodulation signals (see col.4 lines 5-15), and

a corrector (see fig.4, (60R and 60L) left and right noise reduction circuit) independently correcting each audio signal outputted from said audio signal demodulator (4) according to the output of said noise detector (fig. 5, 95), and see col.6 line 63-col.7 line 30 and col.4 line 5-25).

Consider claims 10-11 Hirohashi teaches the noise removal apparatus according to the output of said noise detector (see fig.5, 95), a generation condition of the noise is detected, and corresponding to the detected result, the detection sensitivity of said noise detector is controlled (see figs. 4-5 and col. 7 line 30-col.8 line 5); and an audio output apparatus comprising said noise removal apparatus (see fig.4 such as noise reduction circuit and col.6 line 63-col.7 line 30).

12. Claims 8 and 10-11 rejected under 35 U.S.C. 102(b) as being anticipated by Ugari et al (US PAT. 4,416,024).

Consider claim 8, Ugari teaches that a noise removal apparatus comprising:
a noise detector (see fig. 3 and fig. 5 (96)) detecting the noise included in a demodulation signal having the information corresponding to audio signals of a plurality of channels (stereo) from the demodulation signals (see col. 6 line 57-col. 7 line 22),
an audio signal demodulate (11) demodulating and outputting the audio signals corresponding to each of the plurality of channels (such as left and right) from the information corresponding to the audio signals included in the demodulation signals (see col.7 lines 23-31), and

a corrector (see fig. 3, (13,15,17)) independently correcting each audio signal outputted from said audio signal demodulator according to the output of said noise detector (96, see col.7 line 23- col.8 line 68).

Consider claims 10-11 Ugari teaches the noise removal apparatus according to the output of said noise detector (see figs.3 and 5, (96)), a generation condition of the noise is detected, and corresponding to the detected result, the detection sensitivity of said noise detector is controlled (see col.6 line 57-col. 7 line 31); and an audio output apparatus comprising said noise removal apparatus (see fig.3 and col. 7 line 23-col.8 line 68).

Claim Rejections - 35 USC § 103

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13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1, 7 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirohashi (US PAT. 4,574,390) in view of Tanaka (US PAT. 5,715,351).

Consider claim 1, Hirohashi teaches a noise reduction apparatus comprising:

a noise detector (see fig.1.7) detecting a noise included in a demodulated audio signal;

a first corrector (12) outputting a correction signal for correcting the noise according to a signal value existing just before and just after a predetermine period (see figs.2-3) including a generation time point of the noise in the demodulated audio signal which is detected by said noise detector (see col.2 line 48-57 and col.3 line 12-22);

a second corrector (32) outputting the correction signal for correcting the noise according to at least one of: one or more values of the demodulated audio signal which occur before the generation period of the noise which is detected by said noise detector (8), and one or more of the demodulated audio signal which occur after the generation period (see fig. 6 and col.6 line 26-47 and col.9 line 64-col. 11lin 9) and Hirohashi teaches first corrector and second corrector and selector for the audio signal, but Hirohashi does not clearly teach a high band level detector detecting the level of a high band component of the audio signal, and a selector selecting either one of said first or said second correctors according to the output of said high band level detector.

However, Tanaka teaches a high band level detector (see fig.3, 42) detecting the level of a high band component of the signal, and a selector (30, 43) selecting either one of said first (41,46) or said second (40,45) correctors according to the output of said high band level detector (42 and see col.4 line 55-col.5 line 22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Tanaka in to Hirohashi to provide a first and second switch means for switching an input signal and an output signal in response to the high bank detection signal.

Consider claim 13, the method limitations as recited in the claim correspond to apparatus claim 1. See previous apparatus claim 1 rejection.

Consider claim 7 Hirohashi teaches an audio output apparatus comprising said noise removal apparatus (see fig.1 and abstract).

Consider claim 12, Hirohashi teaches that the generating period of the noise in the demodulated audio signal (see figs, 2-3) which is detected by said noise detection means (see fig.1, 8) is corrected by holding the output signal from said noise reduction circuit (see col.5 line38-col. 6 line 53), but Hirohashi does not clearly teach that the noise removal apparatus of the selector includes a low pass filter for extracting a low frequency component of the demodulated audio signal.

However, Tanaka teaches that the noise removal apparatus of the selector 9(see fig.3, (43, 47)) includes a low pass filter for extracting a low frequency component of the demodulated audio signal (42 and see col.4 line 55-col.5 line 22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Tanaka in to Hirohashi to provide a first and second switch means for switching an input signal and an output signal in response to the high bank detection signal.

Consider claim 14, Hirohashi teaches that the correction signal includes: obtaining a first correction signal (see fig.1, 12 and fig.2) that extends from the signal value in the demodulated signal that occurs prior to the detected period; obtaining a second correction signal (33, by adding and subtraction) based on the plurality of signal values in the demodulated signal that occur prior to the detected period (see col. 5 line 20-col.6 line 11); but Hirohashi does not clearly teach that selecting one of the first and second correction signals based on whether the high band component level satisfies the first or second criteria.

However, Tanaka teaches that selecting (see fig.3, 43, 47) one of the first and second correction signals based on whether the high band component level satisfies the first or second criteria (see col.4 line 55-col.5 line 22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Tanaka in to Hirohashi to provide a first and second switch means for switching an input signal and an output signal in response to the high bank detection signal.

Consider claim 15, Hirohashi teaches that the determining the signal value in the demodulated signal that occurs prior to the detected period (see figs 2-3); determining a signal value the demodulated signal that occurs subsequent to the detected period (see

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figs. 2-3); obtaining the first correction signal by performing a linear interpolation of the signal values in the demodulated signal respectively occurring prior to and subsequent to the detected period (see col.5 line 20-col.6 line 58).

15. Claims 2-3 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirohashi (US PAT. 4,574,390) as modified by Tanaka (US PAT. 5,715,351) as applied to claim 1 above, and further in view of Brommer (US PAT. 6,233,43).

Consider claims 2-3, Hirohashi and Tanaka do not clearly teach the noise removal apparatus according to said first corrector outputs a low pass filter output of a signal value obtained from a linear interpolation of 2 signal values existing just before and just after a predetermined period including a generation time point of the noise, as a correction signal; and the noise removal apparatus according to said second corrector outputs a low pass filter output of the signal value obtained from the linear interpolation of 2 average signal values obtained by averaging a plurality of signal values existing before and after a predetermined period including the generation time point of the noise, corresponding to each of before and after the generation of the noise, as a correction signal.

However, Brommer teaches the noise removal apparatus according to said first corrector outputs a low pass filter (24a) output of a signal value obtained from a linear interpolation of 2 signal values existing just before and just after (by 40a and see col.4 line 44-col.5 line 12) a predetermined period including a generation time point of the noise, as a correction signal (see col.3 line 1-28); and the noise removal apparatus

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according to said second corrector outputs a low pass filter (24b) output of the signal value obtained from the linear interpolation of 2 average signal values obtained by averaging a plurality of signal values existing before and after (by 40b and see col.4 line 44-col.5 line 12) a predetermined period including the generation time point of the noise, corresponding to each of before and after the generation of the noise, as a correction signal (see col.3 lines 1-28).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Brommer in to the teaching of Hirohashi as in view by Tanaka to provide an apparatus for the separation and demodulation of such signal would benefit from the ability to adjust to this temporal variation.

Consider claim 18, the method limitations as recited in the claim correspond to apparatus claim 2. See previous apparatus claim 2 rejection.

16. Claims 4-5 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirohashi (US PAT. 4,574,390) as modified by Tanaka (US PAT. 5,715,351) as applied to claim 1 above, and further in view of Nakamura (EP 477460).

Consider claim 4, Hirohashi and Tanaka do not clearly teach that a level detector the whole band level in the demodulated audio signal, wherein said selector is operated according to a relationship between a ratio of the level output of said high band level detector to the level output of said level detector, and a predetermined value.

However, Nakamura teaches the noise removal apparatus according to further comprising:

a level detector (see fig.1, 5) the whole band level in the demodulated audio signal, wherein said selector is operated according to a relationship between a ratio of the level output of said high band level detector to the level output of said level detector, and a predetermined value (see col.2 line 47-col.3 line 25).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Nakamura in to the teaching of Hirohashi and Tanaka to provide a noise suppressing circuit in a FM tune having a gate for controlling a composite signal applied to a stereo demodulator of the FM tuner.

Consider claim 5 Nakamura teaches that the noise removal apparatus according the detection sensitivity of said noise detector (see fig.1, 9) is changeable corresponding to the output level of said high band level detector (5 and see col.2 line 47-col.3 line 25 and see discussion on claim 4).

Consider claims 19-20, the method limitations as recited in the claims correspond to apparatus claims 4-5, thus note claims 4-5 respectively for rejection.

17. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirohashi (US PAT. 4,574,390) in view of Bommer (US PAT. 6,233,443).

Consider claim 9 Hirohashi teaches the noise removal apparatus (see fig.1) according to said noise detector (7) conducts the noise detection, but Hirohashi does not clearly teach the noise detection such that, for each predetermined period which

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alternates among a plurality of channels, a portion of the period respectively overlaps with each other.

However, Brommer teaches the noise detection (see fig.1, 9) such that, for each predetermined period which alternates among a plurality of channels, a portion of the period respectively overlaps with each other (see col.1 line 39-59 and col.2 line 34-col.3 line50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Brommer in to the teaching of Hirohashi to provide an apparatus for the separation and demodulation of such signal would benefit from the ability to adjust to this temporal variation.

18. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ugari (US PAT. 4,416,024) in view of Bommer (US PAT. 6,233,443).

Consider claim 9 Ugari teaches the noise removal apparatus (see fig.3) according to said noise detector (fig. 5, 96)) conducts the noise detection (see col.6 line 27-col. 7 line 31), but Hirohashi does not clearly teach the noise detection such that, for each predetermined period which alternates among a plurality of channels, a portion of the period respectively overlaps with each other.

However, Brommer teaches the noise detection (see fig.1, 9) such that, for each predetermined period which alternates among a plurality of channels, a portion of the period respectively overlaps with each other (see col.1 line 39-59 and col.2 line 34-col.3 line50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Brommer in to the teaching of Ugari to provide an apparatus for the separation and demodulation of such signal would benefit from the ability to adjust to this temporal variation.

19. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirohashi (US PAT. 4,574,390) as modified by Tanaka (US PAT. 5,715,351) as applied to claim 1 above, and further in view of Vos (US PAT. 5,363,413).

Consider claim 16, Hirohashi and Tanaka do not teaches that averaging the plurality of signal values in the demodulated signal that occur prior to the detection period to obtain a first average value, wherein the second correction signal extends from the first value average.

However, Vos teaches that averaging the plurality of signal values in the demodulated signal that occur prior to the detection period to obtain a first average value, wherein the second correction signal extends from the first value average (see figs. 4-5 and col. 3 lines10-52 and col.5 line 5-col. 6 line 63).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Vos in to the teaching of Hirohashi and Tanaka to provide an average signal strength, an indexing function for generating an index value corresponding to the symbol time period, the index value depending on the signal strength indication and the average signal strength, a metric function for selecting a channel metric corresponding to the index value, and a decision circuit for

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weighting a decoder decision for the symbol time period in accordance with the channel metric.

Consider claim 17 Vos teaches that averaging a plurality of signal values in the demodulated signals that occur subsequent to the detection period to obtain a second average value; and obtaining the second correction signal by performing a linear interpolation on the first and second average values (see figs. 4-5 and col. 3 lines 10-52 and col. 5 line 5-col. 6 line 63).

20. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirohashi (US PAT. 4,574,390) as modified by Tanaka (US PAT. 5,715,351) and Nakamura (EP 477460) as applied to claims 1 and 20 above, and further in view of Matsumoto (US PAT. 5,630,217).

Consider claim 21, Hirohashi, Tanaka and Nakamura do clearly teach the sensitivity of noise detection decreases as the high band component level increases.

However, Matsumoto teaches that the sensitivity of noise detection decreases as the high band component level increases (see figs 3a-3d and abstract and col. 1 line 45-col. 2 line 39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Matsumoto in to the teaching of Hirohashi and Tanaka, Nakamura to provide a noise canceler having improved audibility and applied to a n FM tuner can be provided.

Response to Arguments

21. Applicant's arguments with respect to claims 1-5 and 6-21 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that Hirohashi's second embodiment fails to disclose that each channel's audio signal is demodulated before being sent to the corresponding noise level correction circuit, accordingly, Hirohashi's second embodiment fails to teach correcting each channel's audio signal after the audio signal has been demodulated from the information corresponding to the plurality of audio signals, as required by independent claim 8 (remarks, page 23 last paragraph). However, the argued limitation was not recited in claim 8, and thus moot.

Conclusion

22. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Honojo (US PAT. 5,432,854) is cited to show other related the noise reduction apparatus and audio output apparatus.

24. Any response to this action should be mailed to:

Mail Stop ____ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:
(703) 872-9306

Hand-delivered responses should be brought to:
Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chin Vivian, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See
Patent Examiner
US Patent and Trademark Office


VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

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Knox

571-272-7501

Date 08-19-2005